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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,979	10/25/2001	Robert C. Herrmann	ELL001US2 CON	8687

7590

10/10/2003

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EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/003,979	Applicant(s) HERRMANN ET AL.	
	Examiner Ana M Fortuna	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10/25/01</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, 7, 15, 16, 25, 27, 28, 31, 32, are rejected under 35 U.S.C. 102(b) as being Davidson et al (4,935,139)(hereinafter '139). '439 teach the filter with the composition and particles as claimed in claim 1, in the filter of '439, the particle in the particle layer "do not permeate the support" (abstract, column, lines 44-51). The particle size composition, particle size and particle size selection with respect to the pore size of the support so that the layer of particles can be formed without penetration into the pores of the support is disclosed in '439 (column 6, lines 21-40, column 2, lines 66-68, column 3, lines 1-12, lines 13-54). The limitations of claims 2, 26 are disclosed in '139 (column 2, second paragraph). Claims 6-7 are also disclosed in the reference (column 2, lines 50-58). As to claims 15-16, 31, 32 the particle sizes are disclosed (column 3, lines 1-9). The limitations of claim 25 are discussed with reference to claim 1, above. Regarding claims 4 and 34, the filter having the layer made of titanium or titanate is disclosed in '139 (column 2, lines 50-58).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5, 8-11, 12-14, 17, 18-24, 27, 29-30, 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (4,935,139)('139) as applied to the claims above, and further in view of Pall (3,241,681)('681), and Sekhar et al (5,279,737)('737). Davidson fails to disclose the support made from the listed materials, or the support and layer of particles made from the same material, or made of stainless steel. Pall ('681) teaches filter composite including support and particles layer made of stainless steel (Fig. 1, column 2, lines 26-22). The filter of '681 is however designed to penetrate into the support, however, non-preferred embodiments suggests that when particles larger than the pore size of the support are selected, or the viscosity of the coating solution is increased, formation of the layer on top of the support, without filling the pores can be obtained (column 2, lines 71-72, column 3, lines 1-27). It would have been obvious to one skilled in the art at the time the invention was made to have a filter with coating of metal particles, e.g. stainless steel, on a support of the same material, as claimed in claims 5, 17, 29, 33, and further follow the teaching of '139 or the non-preferred embodiment of Pall, to provide the particle layer on the surface and without penetration into the meshes or pores of the support of the support, e. g by selecting

particles with pore size larger than the apertures of the support, by increasing the viscosity in a particle suspension containing particles of small pore size, as suggested above. The particles as claimed in claims 8-13, are not disclosed in '138. Reference '737 obtaining ceramic composites from oxides of nitriles, boron oxides, titanium etc, are also disclosed, the use of the product in liquid or gas filtration is also disclosed (column 6, lines 1-59, column 3, lines 22-30). It would have been obvious to one skilled in the art at the time the invention was made to substitute titanium oxide by other oxides conventionally used in filtration devices, as suggested by in '737, and further use the particle size concept to avoid impregnation of the porous of the support by the particles in the solution, as disclosed in '139. As to the support claims 14, 18-24, 30-32, and 34-40, selecting multiple layers of metals support for providing strength to the membrane it would have been obvious to one skilled in the art at the time the invention was made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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Ana M Fortuna
Primary Examiner
Art Unit 1723

AMF